Before the
Federal Communications Commission
Washington, D.C. 20554

APR 15 1996

In the Matter of	)	
	)	
Amendment of Part 20 and 24 of the	)	WT Docket No. 96-59
Commission Rules — Broadband	)	
PCS Competitive Bidding and the	)	
Commercial Mobile Radio Service	)	
Spectrum Cap	)	
	)	DOCKET FILE COPY ORIGINAL
Amendment of the Commission's	)	GN Docket No. 90-314
Cellular PCS Cross-Ownership Rule	)	

U S WEST COMMENTS

U S WEST, Inc. below addresses three issues raised in the Notice of Proposed Rulemaking: (a) whether installment payments and/or bidding credits should be extended to only some bidders in the D and E block auction, particularly when such benefits have been of questionable utility (if not actually counterproductive) when applied to C block auction participants; (b) the scheduling of the D, E, and F block auctions; and (c) possible revisions to the F block holding requirements and unjust enrichment provisions.[1] U S WEST further appends as Attachment A a paper prepared by Robert Harris, Professor of Economics at the Walter Haas School of Business, University of California, Berkeley.

[1] With respect to the other issues raised in the Notice, U S WEST supports the FCC's proposals to make less onerous the ownership disclosure requirements (id. at 36 ¶¶ 81-82) and to replace the current arbitrary 20% CMRS-related affiliation rules with a simplified controlling interest standard (id. at 32 ¶ 72). U S WEST further agrees with the FCC that the present record is insufficient to sustain the race- and gender-based provisions in the current F block rules under the appropriate legal standard of review (id. at 11-12 ¶¶ 20-23). U S WEST takes no position on the FCC's tentative conclusion that it should not delay the F block auction in an attempt to adduce sufficient evidence to support race- and gender-based F block preferences (id. at 13 ¶ 26) because the Commission's decision should be made based primarily on input by firms eligible to participate in the F block auction (which U S WEST is not). However, as explained in Section II *infra*, under no circumstances should the FCC delay commencement of the D and E block auction if the F block auction is delayed, whether by FCC decision or by legal challenge.

I. Bidding Credits and Installment Payment Plans Should Not Be Extended to the D and E Auction

The C block auction confirms that bidding credits and installment payment plans have been of questionable value because bidders have bid through the value of the credits/payments.[2] However, the attached paper by Professor Harris documents that installment payment plans in particular can have the unintended effect of awarding licenses, not to those who value the spectrum the most, but to those who value the "loan" most — that is, the riskiest ventures with the highest cost of capital from the commercial markets and the firms which will face the greatest difficulty in building systems and providing service to the public. As Professor Harris also explains, installment payments can further promote speculation and hinder entrepreneurship.

Regardless of the continuing validity of bidding credits and installment payments in the F block auction, the Commission should not extend such preferences to the D and E auction. Such action would almost certainly preclude the licenses from being assigned to the firms placing the highest value on their use and the firms best positioned to provide service to the public.[3] The examples below demonstrate that the discriminatory avail-

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[2] All auction experience shows that bidders simply bid through their bidding credits — that is, they paid a net price comparable to or larger than the market value of the licenses. In the regional narrowband auction, the net prices paid by designated entities ("DEs") was generally equal to or higher than the prices paid by non-DEs for comparable channels. Total gross bids in the C block auction now exceed $13 billion; excluding the 25% bidding credit, the total net price for the C block is almost $10 billion — a sum more than twice that paid for the A and B block licenses (*i.e.*, $4 billion).

The $6 billion difference between the bids for the A and B licenses and the C licenses suggests strongly that C block applicants are bidding based on the value of the license and the time value of money of the "loan" from the federal government. Indeed, the C block auction experience further suggests that the value of the loan may be worth more than the licenses themselves ($6 billion vs. $4 billion).

[3] The FCC has consistently reaffirmed that auctions should be designed so radio licenses are awarded to those firms which value the spectrum the most. *See, e.g.*, Competitive Bidding, Implementation of Section 309(j), Notice of Proposed Rulemaking, 8 FCC Rcd 7635 at ¶ 34 (1993)("[P]arties that value licenses the

Continued on Next Page

ability of bidding credits and installment payments will skew the auction results and almost guarantee that many licenses will be awarded to the highest risk ventures least capable of building a system and providing service.

Bidding credits, when made available to only some auction participants, allocate licenses in an economically inefficient manner. Suppose Bidder A values a license at $99 and Bidder B values it at $80. In a normal auction, Bidder A will win the license by paying up to $99 and the economically efficient outcome is achieved. However, if Bidder B has a 25% bidding credit, Bidder B will win the auction by bidding $100 but actually paying only $75. Auction experience teaches that bidding credits, if large enough, can be exclusionary — by effectively shutting non-credited bidders out of an auction.[4]

The availability of installment payment plans will also result in the award of licenses to entities that do not place the highest value on those licenses. Assume two firms, Firm Y and Firm Z. Firm Z values the license the most, say $550 million, but does

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most should generally best serve the public and make rapid and efficient use of the spectrum."); Second Report, 9 FCC Rcd 2348 at ¶ 70 (1994)("[A]ward[ing] licenses to the parties that value them most highly will best achieve these [statutory] goals. Those parties are most likely to deploy new technologies and services rapidly, promote the development of competition for the provision of . . . services . . . . , and thus foster economic growth."); Third Report, 9 FCC Rcd 2941 at ¶ 12 (1994); Fourth Report, 9 FCC Rcd 2330 at ¶ 6 (1994); Fifth Report, 9 FCC Rcd 5532 at ¶¶ 5 and 24 (1994), and Separate Statement of Commissioner Chong ("A fundamental premise of competitive bidding is that the bidder who values a particular license most will submit the highest bid."), Separate Statement of Commissioner Ness ("Our auction methodology will promote a robust competition to put each license in the hands of the applicant who values it most."); Third Memorandum Opinion, 10 FCC Rcd 175 at ¶ 20 (1994)("In order to make service available as rapidly and efficiently as possible, we must ensure that those who value the license most highly, and will offer the services most valued by the public, have an opportunity to bid on them."); Fourth Memorandum Opinion, 9 FCC Rcd 6858 at ¶ 2 (1994); Second Order on Reconsideration, 78 Rad. Reg. 2d (P+F) 1641 at ¶ 60 (1995); Improving Commission Procedures, FCC 96-50, at ¶ 11 (Feb. 14, 1996).

[4] Indeed, only two of the 255 original bidders in the C block auction — less than 1% of all participants — were not eligible to use the 25% bidding credit. Neither of these two bidders survived the auction, with one bidder withdrawing in Round 9 and the second withdrawing in Round 36.

not qualify for installment payments. The maximum amount Firm Z will bid is $550 million, a sum equal to its valuation of the license.

According to its business case, Firm Y values the license considerably less than does Firm Z, say $400 million, but qualifies for the "enhanced" installment payment plan (interest at T-bond rate (6.1%) for the first six years; interest and principal the last four years). Firm Y is less financially solid than Firm Z and the money it must raise from the investment community is more expensive (assume it must issue high risk bonds at 18%). Because of the relative value placed on the Commission's financing terms, however, Firm Y can bid over $960 million for the license (or up to $725 million net) — even though it values the spectrum at $150 million less than does Firm Z. *See* Attachment A, Appendix I.

The Commission, before conducting any auction, determined that the "record does not support" extending C and F block preferences like installment payment plans to the other broadband PCS auctions.[5] The experience with the current C block auction confirms that, whatever the merits of using bidding credits and installment plans in the F block auction, such preferences should not be extended to the D and E block auction. With installment payments in particular, not only might licenses be awarded to the bidder valuing them the least, but the licenses will likely be assigned to those firms least able to build a system and to provide service to the public — thereby undermining the Commis-

[5] *See* Fifth PCS Memorandum Opinion and Order, 10 FCC Rcd 403, 414 at ¶ 15 (1994).

sion's objective to introduce more competition in the CMRS market and to increase the choices available to the American consumer.[6]

II. The D, E, and F Block Auctions Should be Held As Quickly as Possible

Congress, in establishing auction authority, made clear that the Commission should strive to ensure the "rapid deployment of new technologies, products, and services."[7] Consistent with this objective, the Notice confirms that the Commission is "committed to expediting the delivery of new services to the public."[8] U S WEST is in full agreement with these general goals, but there is more at stake here — namely, the competitive advantage earlier auction winners will continue to enjoy so long as the D, E, and F block auctions are not completed.

Specifically, the A and B block auction was completed well over a year ago, and the licenses were granted in June 1995. It is expected that the A and B licensees will initiate service in some markets as early as June 1996 and in many of the remaining markets before the end of this year. Despite its best efforts, the Commission encountered significant delays in commencing the C block auction (although, given the number of obstacles, it should be commended for beginning that auction when it did).

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[6] By any reasonable measure, the Commission's allocation of almost 1,000 broadband PCS licenses to small businesses — 48% of the total broadband PCS licenses and one-third of total POPs — fully discharges the Congressional mandate that licenses be disseminated to a wide variety of applicants.

[7] 47 U.S.C. § 309(j).

[8] Notice at 7 ¶ 10.

Nevertheless, the fact remains that D, E, and F block applicants have been forced to sit on the sidelines while their competitors prepare to begin service. Given this head-start, the Commission must make every effort to avoid further delays to minimize the adverse impact on the D, E, and F applicants' business plans. To this end, U S WEST encourages the Commission to resolve the matters raised in the Notice expeditiously to facilitate a July 1996 auction start date.

A July commencement date for the D, E, and F block auctions is clearly achievable and is consistent with the Chairman's anticipated start date.[9] The Commission's general and PCS-specific auction rules give the Commission expansive flexibility to develop deadlines and procedures as it sees fit.[10] In fact, the Commission recently commenced another auction — the DBS auction — less than three months after release of the underlying Notice of Proposed Rulemaking proposing the specific rules applicable to that auction.[11] In the DBS context, the Commission adopted final auction rules 49 days after proposing them, and commenced the auction 40 days thereafter. This 89-day process as applied to the March 20 release date of the instant Notice would result in the D, E, and F block auctions commencing on June 17, 1996. A July timetable for commencement of the D, E, and F auctions is, therefore, well within reach, and U S WEST urges the Commission to meet this schedule.

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[9] Chairman Hundt announced the July start date in his remarks at the "FCC Auctions '96 Conference" held on March 15, 1996 and in remarks made on March 26, 1996 at the CTIA Convention in Dallas.

[10] *See generally* Part 24, Subpart H of the Commission's Rules.

[11] The DBS NPRM was released on October 27, 1995; a Report and Order adopting the DBS auction rules was issued on December 15, 1995; a Public Notice announcing the filing requirements was released less than a week later on December 21; Form 175 applications and upfront payments were due January 19, 1996; the auction commenced on January 24, 1996 — 89 days following issuance of the NPRM.

On a related point, the Commission asks whether the D, E, and F blocks should be auctioned together in a single auction or whether separate but concurrent auctions should be utilized.[12] There are pros and cons with each approach. U S WEST believes that, given the unforeseen delays in commencing the three 10 MHz block auctions, the Commission should give "time-to-market" considerations the utmost priority. Consequently, if it ultimately decides to hold a single auction, the Commission should nevertheless develop a contingency plan to proceed with separate auctions so that a legal challenge to one auction does not delay commencement of the other auctions.[13] However, under no circumstances should bidding credits and/or installment payment plans be made available in the D and E block auction.

In developing its auction rules two years ago, the Commission committed that it would conduct the broadband PCS auctions "as close together in time as possible" because it acknowledged that A and B block licenses would otherwise have a "competitive advantage over winners in the later auctions."[14] The delays encountered with the C block auction were beyond the control of the Commission. Nonetheless, to minimize these

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[12] The Commission apparently is not entertaining the option of holding the F block auction after the D and E block auction. U S WEST understands why such an alternative would be considered unattractive — it could frustrate licensees' efforts to combine licenses and would result in further delays. U S WEST notes, however, that the two alternatives proposed by the Commission would give F block bidders less information about the value of 10 MHz BTA licenses and would most likely result in reduced investment opportunities for them. For example, many parties that do not win a D or E block license may be eager to invest their unused funding to support F block applicants. This cannot occur, however, if the D, E, and F blocks are all auctioned concurrently.

[13] The Commission should, moreover, put applicants on notice that the auctions may be separated if a legal challenge results in a sty of less than all three of the remaining spectrum blocks.

[14] Fourth PCS Memorandum Opinion and Order, 9 FCC Rcd 6858, 6864 at ¶ 32 (1994).

competitive concerns, the Commission should continue to make its highest priority conducting the D, E, and F block auctions as expeditiously as possible.

III. Reducing the Holding Requirements Would Provide Little Meaningful Relief

The Commission proposes to reduce the current five-year holding requirement on F block licenses to three years but to retain the current unjust enrichment provisions.[15] Under the unjust enrichment provisions, the assignee of a license not eligible for bidding credits and/or installment payments must, as a condition of approval of the license transfer, pay the remaining principal and any unpaid accrued interest on the gross bid of the licensee.[16] In short, under current rules, the benefits associated with bidding credits and installment payments do not accrue to assignees which are not small businesses.

U S WEST does not oppose the proposal to reduce the holding requirement for F block licenses; indeed, it should consider extending any changes made to F block licenses to C block licensees as well. But the Commission needs to understand that any such change will likely have minimal practical effect.

The Commission adopted the entrepreneurial set aside for the C and F blocks and preferential bidding and payment terms for small businesses with the expectation that entrepreneurs, and small businesses in particular, would pay lower prices for spectrum than paid by larger firms for comparable spectrum in other auction blocks. The C block auc-

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[15] *See* Notice at 28 ¶ 62.

[16] *See* 47 C.F.R. §§ 24.711(c) and 24.716(c) (installment payments) and §§ 24.712(d) and 24.717(d). *See also* Notice at 28 ¶ 61.

tion did not work as anticipated, however. Specifically, what was not anticipated at the time the auction rules (including the unjust enrichment provisions) were developed was that C block bidders would bid through the value of their preferences (both credits and installment payments) and end up paying more than their counterparts. And it clearly was not anticipated that the gross bids submitted by C block bidders would be over three times that of the respective A and B block winning bids: $13+ billion vs. $4 billion.

The high amounts bid in the C block auction impose a severe restraint in the after-market of C block licenses. Regardless of the length of the holding period, it is unclear whether other small businesses, eligible to inherit the auction winner's preferences, would be interested in acquiring C block licenses in the after-market (and, potentially, F block licenses if comparable prices are paid in that auction). However, the reality is that non-eligible firms will almost certainly be unwilling to acquire spectrum at the C block prices (and, perhaps, F block prices) — even if they were able to inherit the bidding credit and installment payment options available to the auction winners. As noted, the net price bid for C block licenses is 2.5 times more than what was paid for equivalent spectrum in the A and B blocks. Thus, even the elimination of both the holding period and the unjust enrichment provisions applicable to C and F block licenses may not produce material benefits for the C and F block auction winners.

IV. Conclusion

The Chairman has stated that "[f]or the auctions to be a success, it doesn't matter how much we raise" and that the "primary reason" the Commission is holding auctions "is to create competition, not raise revenues":

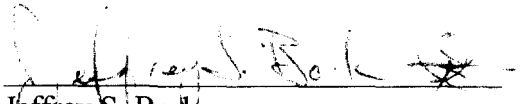
> By creating competition, we will increase the quality and the range of services available, and we will lower prices to consumers. What matters is whether we award licenses efficiently and quickly to those who value them most highly and who will compete most aggressively. If we succeed in this goal, we will create the greatest number of new jobs and stimulate new capital investment . . . [17]

The attached paper by Professor Harris documents that extending bidding credits and/or installment payments to D and E block bidders will distort the market by awarding the licenses, not to those who value them most highly, but to those who most value the benefits of the government's loan. The losers in this process will be the American consumers, who will enjoy less robust competition in the mobile telecommunications market.

The Commission should commence the D, E, and F block auctions no later than July 1996. And, because of the C block experience, it may want to re-think the use of bidding credits and installment payment plans for the F block auction to ensure that the intended beneficiaries of these preferences truly benefit by them.

Respectfully submitted,

U S WEST, Inc.



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[17] Statement of Chairman Reed Hundt, 1994 FCC LEXIS 5990 (Dec. 1, 1994).

U S WEST Comments
WT Docket No. 96-59
April 15, 1996

ATTACHMENT A

The Use of Bidding Preferences in the D, E, and F-Block PCS Auctions
by
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University of California, Berkeley and
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A. Introduction and Summary

Over the past three years, the Commission has broken major new ground in designing and conducting rules for auctioning one of the nation's most valuable resources, the airwaves. In so doing, the Commission has had to balance somewhat conflicting public policy objectives and overcome serious legal and technical obstacles. Moreover, at the time the Commission established rules governing the broadband PCS auctions, there was very little empirical knowledge about how it's rules would interact with actual bidders in a live auction. Since then, the experience gained in the A, B, and C-block auctions strongly indicates that some of the FCC's rules should be modified to better implement the Congressional objectives in the D, E, and F-block auctions.

Section B notes the varied, somewhat conflicting nature of the Congressionally-mandated policy objectives for spectrum auctions, which collectively require that the Commission make tradeoffs among competing objectives. Section C reviews the economic rationale for the bidding credits, installment payments and subsidized interest rates for qualifying bidders in the C-block auction and examines the results of that auction to date,

noting the strikingly higher prices being bid for C-block licenses than were paid for A and B-block licenses in the earlier auction.

To explain this result, Section D compares two contrasting frameworks for asset valuation. Entrepreneurship is the process of creating economic value, hence an entrepreneur values assets according to the "firm theory of value," i.e., the use value of spectrum in providing wireless communications services. *Speculation* is the act of buying an asset in the expectation that its future market value will increase at a rate that exceeds the time value of money, sometimes referred to as the "castle-in-the-air" theory of value. A pure speculator does not use an asset, he merely resells it at some future date, so the value of spectrum to a speculator is not its use value, but its future sales value.

In Section E, I review the results of the C-block auction and four possible explanations of those results. While it is not possible to quantify the precise effects of several different explanations of C-block bidding, the bidding to date strongly indicates that (1) bidders who do are not eligible for bidding credits and installment payments are effectively precluded from the auction; (2) bidders are "bidding through" the bidding credits and subsidized financing, so there will be no net benefit of the preferences to winning bidders; and (3) the preferential rules are promoting speculation at the expense of entrepreneurship, by creating a moral hazard and adverse selection of bidders.

Section F then explains why the results of the C-block auction are inconsistent with Congressionally-mandated policy objectives, because (1) promoting speculation is contrary to the goals of development and rapid deployment of new services and recovering value for the public; (2) bidding credits tend to allocate licenses in an economically inefficient manner; and (3) installment payments tend to allocate licenses to those entities with the highest costs of capital and are least economically viable.

Section G recommends that the lessons of the C-block auction be used to guide the Commission in developing rules for the D, E and F-block auctions to reduce speculation, moral hazard and adverse selection. The Commission's good faith attempt to promote diversity of spectrum ownership is commendable. However, the most economically efficient way to promote this objective is to set aside certain blocks, such as the C and F-blocks for businesses that qualify under maximum revenue and net worth thresholds. Adding installment payments and bidding credits to these set aside blocks hinders the economic efficiency objective and does not appear to allow the eligible bidders to purchase the spectrum at below market rates. Whatever rules the FCC implements in the F-block, it should not implement any bidding preferences in the D and E-blocks. If bidding credits and installment payments are added to the D and E-blocks, it will serve to exclude many of the bidders who value the licenses most highly and tend to allocate them to bidders with the highest costs of capital.

B. Public Policy Objectives of Spectrum Auctions

The FCC has broken new ground with the spectrum auctions it has designed and conducted since the summer of 1994. The Commission should be commended for its careful attempts to establish auction rules that promote the multiple policy objectives established by federal legislation. The four Congressionally-mandated objectives are:

> (A) the development and rapid deployment of new technologies, products, and services for the benefit of the public, including those residing in rural areas, without administrative or judicial delays;
>
> (B) promoting economic opportunity and competition and ensuring that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses owned by members of minority groups and women;
>
> (C) recovery for the public of a portion of the value of the public spectrum resource made available for commercial use and avoidance of unjust enrichment through the methods employed to award uses of that resource; and

(D) efficient and intensive use of the electromagnetic spectrum.[1]

Implementing these objectives requires the Commission to balance tradeoffs between them in an economically rational and equitable manner. For example, there is a clear tradeoff between objective (B), "disseminating licensees among a wide variety of applicants, including small businesses owned by members of minority groups" and objective (D), the "efficient and intensive use of the electromagnetic spectrum," which is widely understood to mean that the entity which values a given spectrum allocation the most highly should get the license. To the extent bidders who qualify for the Commission's preferences (i.e., businesses with revenues and assets below certain thresholds, including many small businesses owned by women and minorities) are not the entities that value a given spectrum allocation most highly, any preferential auction rule which allows them to make the winning bid reduces economic efficiency.

In addition to balancing the tradeoffs among sometimes conflicting policy objectives, the Commission designed auction rules without the benefit of actual experience. At the time the Commission first established rules governing the broadband PCS auctions, there was very little empirical knowledge about how the Commission's rules would interact with actual bidders in a live auction. Since that time, however, experiences in the A, B, and C-block auctions have provided evidence that some of the FCC's rules should be modified to better implement the Congressional objectives.

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[1] 47 U.S.C § 309(j)(3.)

C. Background and Description of the C-Block Auctions

1. The Economic Rationale Underlying Bidding and Payment Preferences

In an attempt to promote the statutory objective of "avoiding excessive concentration of licenses...by disseminating licensees among a wide variety of applicants, including small businesses owned by members of minority groups and women," the FCC decided to limit participation in the C and F-blocks to firms with assets of less than $500 million and revenues of less than $125 million. Following *Adarand*, the Commission settled on a series of preferences based on the size of the firm's gross revenues, with the largest preferences going to firms with less than $40 million in gross revenue (so called "small businesses") in the C-block auction.

The economic rationale underlying these preferences was the theory that capital markets are imperfect, meaning that small businesses, even those with strong management and business plans, face difficulty in raising long-term funding due to factors ranging from a lack of collateral to economically irrational discrimination. The Commission reasoned that, by setting aside C and F-block spectrum for smaller businesses and by providing preferential bidding and payment terms, it could compensate for these capital market imperfections. The Commission believed that these bidding preferences and payment terms would allow qualifying bidders to purchase spectrum at lower prices than the large companies who were expected to dominate the other auction blocks.[2]

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[2] At the time of the auction design, the Commission did not have any convincing empirical evidence but was clearly aware of the theoretical possibility that the installment payments and other preferences could "encourge speculation instead of legitimate applicants who can attract capital" and "could result in very high bids, which could reduce competition and promote defaults among entrepreneuers." The results of the C-block auction suggest that the Commission should re-think these issues. See Fifth PCS Memorandum Opion and Order, 10 FCC Rcd 403, 460 at paragraph 104 (Nov. 23, 1994).

2. Installment Payments and Bidding Credits in the C-block Auction

The three important preferences offered by the Commission to qualifying entities in the C-block auction are bidding credits, the automatic extension of credit through installment payments and subsidized interest rates associated with installment payments.[3] Small businesses in the C-block are being given a bidding credit in the form of a 25 percent discount off their winning bids, so their net price will be 75 percent of the bid amount. The credit is intended to lower the price of spectrum for qualifying bidders, and, thereby, the amount of capital they need to raise. It also effectively precludes non-credited bidders from competing for spectrum in the C-block auction because non-qualified bidders will pay a premium over economic price.

Installment payments are a direct government loan to winning bidders, which reduce the amount of private capital that winning bidders need to raise. Installment payments involve two analytically distinct mechanisms. First, firms are automatically granted credit by the federal government even if their financial condition, management and business plan would not allow them to generate capital under <u>any conditions</u> from the private market. The terms of this government loan are unprecedented because there is no upper limit on the amount of credit which can be generated by the bidders. Second, the interest rates on installment payments are set well below market rates and, in some cases, payments on the principal are deferred, amounting to a substantial subsidy. As I will argue later, the installment payment combination of automatic credit extension and the interest rate subsidy (with or without the bidding credits) substantially reduces the chance that the bidder who values the spectrum most highly will win the license when an auction block contains a mix of qualifying and nonqualifying bidders or

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[3] The FCC has also provided a 25% discount on up front payments for smaller businesses. Up front payments, which are applicable to the down payment in the case of a winning bid, were requirements that bidders deposit $0.02 per MHZ pop that they wanted to be eligible to bid for. These payments are intended to prevent frivolous or insincere bidding.

when bidders who enjoy the same payment terms have different costs of capital. The three different C-block installment payment plans are explained below.

Table I - Installment Plans for C-block Participants

Qualifying Revenues	Interest Rate	Terms
greater than $75 million	10 Year U.S. T-Bond + 3.5%	principal and interest amortized over ten years
between $40 and $75 million	10 Year U.S. T-Bond + 2.5%	first year interest only, next nine years principal and inter
less than $40 million ("small businesses")	10 Year U.S. T-Bond	first six years interest only, next four years interest and principal

3. Summary Results of C-Block Auctions

There were 255 qualifying bidders in the C-block auction. Only two were ineligible for the 25 percent bidding credit and the most generous installment plan option, both of whom dropped out early in the bidding. Presumably, there were many more potential bidders who did not even attempt to enter the C-block auction because they would not have been eligible for the full financial preferences. Total gross bids[4] in the C-block auction currently exceed $13 billion (almost $10 billion after the bidding credits are applied).

[4] Gross bids are defined as the final winning bid price before any bidding credits or installment payments are applied. The gross price is always higher than the actual economic price or net present value if bidding credits or installment payments are used by the winning bidder.

Strikingly, the net bid amount, almost $10 billion, is more than twice the total generated by the A and B block licenses, each of which totaled about $4 billion in winning bid prices, even though the "big players" were precluded from the C-block auction in an effort to keep prices down.[5]

D. Alternative Frameworks for Asset Valuation: Entreprenuership and Speculation

The disparity in gross prices for A/B-block spectrum and C-block spectrum is particularly striking in light of the fact that A and B-block winners will have "first mover advantages" in constructing, marketing, and providing PCS networks and service. However, before attempting to explain this disparity it is important to have a basic context for understanding how firms value and thus bid for assets in an auction or other market regime. There are two basic paradigms for asset valuation — entrepreneurship and speculation. *Entrepreneurship*, the process of creating economic value through building a new business, entails buying an asset and using it for productive purposes as part of an overall plan to design, build and provide innovative new communications services. Hence, the value of spectrum to an entrepreneur is based on its use value in providing wireless communications services.

Speculation is the act of buying an asset in the expectation that its future market value will increase at a rate that exceeds the time value of money. A pure speculator does not use an asset, he merely resells it at some future date. Hence, the value of spectrum to a speculator is not its use value, but its future sales value.[6] As explained by noted economist Larry Darby,

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5 Although the individual licenses in the A/B-block auctions covered larger geographic areas (MTAs) than the C-block auction (BTAs), the total areas and populations of the three blocks were comparable.

6 In an attempt to prevent speculation, the FCC has implemented anti-trafficking rules to prevent license resale and requirements mandating licensees to build out PCS systems under strict time frames.

there is a critical distinction between the two asset valuation frameworks, entrepreneurship and speculation.[7] The pure entrepreneurial framework of asset valuation is based on "the firm foundation theory," and is the standard model taught in economics and business school curriculums. This framework postulates that an asset's worth is the net present value of its expected future income streams, adjusted for risk. According to Darby:

> This theory maintains that spectrum licenses (like stocks, bonds, real estate and other assets) have 'intrinsic' value that can be determined, approximately by careful analysis of present condition and future prospects as they might be embodied in estimates of interest rates, risk, growth, and earnings in general; and, more particularly by analyzing the details for a given asset of market competition, technological change, government taxation and regulation, global economic conditions, consumer incomes and tastes and the like.[8]

The second framework of asset valuation is based on the "castle-in-the-air" or "greater fool" theory, whereby speculators "bet" on the value that others will place on the asset at some future time, not the economic value-added that they can create by or with the asset. This theory is premised on the fact that mass psychology, moral hazard (as explained below) or other factors can sometimes cause markets to price assets well above their economic value. Darby uses the following, whimsical example to make his point:

> [It] might make sense to pay $1,000 for title to the Brooklyn Bridge [even if you know the title is a fraud] if you know of a fellow around the corner willing to pay $1,500.[9]

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7 Larry Darby, (former Chief of the FCC's Common Carrier Bureau and student of spectrum auctioning) citing Burton Malkeil in "Prepared Statement of Larry Darby Before the Senate Committee on Commerce, Science and Transportation Regarding Policy Implications of Spectrum Valuation and License Auctions," *Federal News Service*, July 27, 1995.

8 Larry Darby, *Federal News Service*, July 27, 1995.

9 Larry Darby, *Federal News Service*, July 27, 1995.

E. Potential Explanations of the C-Block Results

Economic theory and empirically observed changes in market conditions point to five factors that may explain why bidders for the C-block licenses are bidding so high compared to the A/B-block bidders:

- eligible bidders are "bidding through" the net present value of the bidding credits and interest rate-subsidized installment payments;
- the installment payments (regardless of the preferential interest rates) created a "moral hazard," encouraging speculation at the expense of entrepreneurship;
- new information released during the interval between the A/B and C-block auctions has increased the market valuation of spectrum;
- international investors decided to enter the U.S. market since the A/B-block auctions not to turn a short-term profit, but to gain experience operating PCS networks;

Of these four factors, the first two are sources of bias introduced into the auction process by the C-block rules, primarily related to the *speculation* framework for asset valuation, while the other two explanations reflect changes in the perceived underlying economic value of spectrum, related to the *firm foundation theory* of valuation. While it is not possible to empirically separate the effects of each factor, it is very unlikely that the large increase in C-block bids can be attributed solely to the second two explanations.

1. Bidding Through the Net Present Value of Credits and Subsidized Financing

Both the bidding credits and the low interest installment payments reduce the net present value of the of the gross winning bids for eligible bidders. Current C-block gross final bids total more than $13 billion. Because all the bidders remaining in the auction are eligible for bidding credits, the bids net of bidding credits are reduced to just under $10 billion. As one would expect on the basis of economic theory, the results of the C-block auction indicate that if enough bidders are eligible for the bidding credits and installment payments to sustain a

liquid auction market even without non-eligible bidders, then the bidding credits and installment payments *will not lower the final present value cost of acquiring spectrum* because the eligible bidders, competing against each other, will "bid through" any bidding credit and installment payment discounts. This means bid credits and installment payments do not lower the final market price paid for spectrum by qualifying bidders.

2. *Installment Payments Promote Speculation and Hinder Entrepreneurship* by *Creating Moral Hazard and Adverse Selection*

Despite the Commission's down payments, anti-trafficking rules, and buildout requirements (which were clearly intended to inhibit speculation), installment payments promote speculation, moral hazard and adverse selection, by transferring a substantial amount of risk from the licensee to the Commission. Because bidders with installment payments have to pay only ten percent of their winning bids in down payments and they do not pay any principal on their loans for the first six years, the installment payments transfer much of the risk associated with buying spectrum away from the licensees to the government. Because they do not have to raise much "up-front money," winning bidders can default on their installment payments and declare bankruptcy if they are not able to compete successfully in the PCS marketplace.[10] If successful, they will enjoy the full fruits of their success. *Thus, purchasing spectrum using installment payments becomes, in the short term, a one-way bet backed by the federal government.*

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[10] We are not suggesting that any bidder intends to default; merely that there exists the possibility of default, even if unintended, with minimal recourse.

Hence, installment payments for spectrum licenses create a *moral hazard,* much like federal deposit insurance, which encouraged risk-seeking savings and loan managers to make uneconomically risky loans with government-insured money:[11]

> Moral hazard may be defined as actions of economic agents in maximizing their own utility to the detriment of others, in situations *where they do not bear the full consequences or equivalently, do not enjoy the full benefits of their actions* due to uncertainty and incomplete or restricted contracts which prevent the assignment of full damages (benefits) to the agent responsible.[12]

A related economic problem, *adverse selection*, often accompanies moral hazard. "Adverse selection occurs when the people or institutions that are most likely to produce the adverse outcome" are those who participate in the mechanism that creates the moral hazard in the first place.[13] Thus, installment payments may adversely select a disproportionate share of bidders who place the highest speculative value on spectrum licenses, raising the likelihood they would fail in the PCS market and default on their installment payments. Adverse selection occurs because such bidders realize that installment payments ensure that they will not be risking much of their own (personal or investor) capital, even if their guesses about the PCS market and future spectrum values prove to be wrong. Thus, basic economic theory predicts that installment payments create a systematic bias toward speculation and away from entrepreneurship.

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[11] It needs to be acknowledged that, unlike the S&L bailout which was a net drain on the U.S. Treasury, the FCC's spectrum auctions (even net of defaults) will bring revenue into the U.S. Treasury.

[12] *The New Palgrave: A Dictionary of Economics*, Vol 3, The Stocketon Press, New York, New York (1987) p. 549.

[13] This definition of adverse selection is a modified version of the definition provided by Frederic Mishkin, *The Economics of Money, Banking and Financial Markets*, Scott, Foresman and Company, (1989), p.207, as it applies to federal bank deposit insurance.

Empirical evidence from the C-block auction is consistent with the economic theory of speculative asset valuation, moral hazard and adverse selection. Not surprisingly, C-block participants and commentators have criticized the auctions for leading to speculative outcomes (italics added for emphasis):

- Many high-profile bidders — U.S. AirWaves Holdings, Cook Inlet, BellSouth PCS L.P., and PersonalConnect Communications Inc./Craig McCaw — already have left the C-block arena *because market prices have exceeded their real-world valuations.*[14] (These bidders left the auction between February 12-16, rounds 25-29, Gross bids totaled $8.6 billion at the end of round 29)

- The BellSouth Personal Communications Inc./Cook Inlet Region Inc. partnership bailed out of the auction because they could not justify the prices being paid for spectrum. According to Tom Dougherty, President of the joint venture, *'There's only so much you can do to make a business case work... And when you begin speculating about what might happen after the auction that will make your business case work, you've gone past the point of reason.*[15]

- According to U.S. AirWaves CEO John DeFeo, who dropped out of the auctions, "We do not believe *the prices in the large, high quality markets are economically viable to produce the appropriate returns.*[16]

- Thomas Sullivan of Telecorp which also left the auction in the early rounds explained, *"Prices got too high, and things got crazy.*[17] (Left the auction on February 21, 1996, round 31, gross bids totaled $8.9 billion)

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[14] Debra Wayne, "C-block Spectrum Speculation Runs High," *Crain Communications Inc: Radio Communications Report*, March 11, 1996.

[15] "C-block Auction Passes 7 Billion Dollar Mark," *PCS Week*, No. 9, Vol. 7, February 28, 1996.

[16] Debra Wayne, "PCS Stakes Get Too Rich for Some C-block Bidders," *Crain Communications Inc.: Radio Communications Report*, February 26, 1996, pp. 1-2.

[17] Debra Wayne, *Crain Radio Communications Report*, February 26, 1996, pp. 1-2.

- North Coast Mobile dropped out of the auctions after a key investor, Cablevision Chairman Charles Dolan and President John Dolan decided bidding had reached "*a level of speculative excess which we could not economically justify.*"[18] (Left the auction on March 25, 1996, Round 60, Gross bids totaled $12.2 billion)

- Go Communications dropped out of the auctions due to "exorbitant prices for spectrum and the questionable legal status of several bidders." According to Go CEO Steven Zecola "*there is no recognized vision of PCS that can produce acceptable financial returns to investors at these inflated prices.*[19] (Left the auction on March 28, 1996, round 66, Gross bids totaled $12.5 billion)

Ironically, the Commission's efforts to facilitate entry by providing subsidized financing may have had the opposite effect, by adversely selecting bidders with the highest cost of capital. Moreover, the high gross bid prices of spectrum may make it more difficult to raise financing for winning bidders to design, build and operate PCS networks.

3. New Information Was Released to the Market After the A and B- block Auctions

If new information about consumer demand, technology, regulatory policy or any other factor which effects the potential profitability of the C-block PCS licenses was released to the market during the interval between the A/B- and C-block auctions, economic theory predicts that this new information will be reflected in the prices of the C-block spectrum. For example, the growth of cellular subscribers has continued at a 40 percent annual rate, a higher rate of growth than was predicted six months ago. This and other new information may have been partially responsible for the increases in C-block spectrum prices since the A/B-block auctions. On the other hand, countervailing information, such as the unexpectedly long delay (caused by

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[18] *Communications Daily*, Volume 16, No. 61, March 28, 1996.

[19] *Communication Daily*, April 1, 1996.

litigation) between the A/B and C-block auctions would have the effect of reducing the value of the C-block relative to the A/B-blocks. Hence, the net effect of new information is unclear.

4. International Investors Decided to Enter the U.S. Market Since the A/B-Block Auctions, Not to Turn a Short-Term Profit, but to Gain Experience Operating PCS Networks

According to Communications Daily, non-U.S. investors have decided to invest in the auctions as a long-term strategy for gaining experience in building and operating PCS networks in preparation for deploying PCS systems around the world:

> Korean, Japanese and other Asian companies have provided loans or direct investment to some PCS bidders, helping fuel aggressive bidding at levels twice that of A&B block auctions in 1994-1995. David Roddy, chief telecom analyst at Deloitte & Touche, said money backing ambitious U.S. companies represents future players in China, India, Indonesia and Korea, where telecom services are limited. "They are going to learn how to do the business," Roddy told us.[20]

Companies such as NextWave Communications and DCR Communications have been cited as receiving these investments.[21]

F. C-Block Results Are Inconsistent with Congressionally Mandated Policy Objectives

1. Promoting Speculation is Contrary to the Goals of Development and Rapid Deployment of New Services and Recovering Value For the Public From Spectrum

The first objective enumerated by Congress is the "development and rapid deployment of new technologies, products, and services for the benefit of the public, including those

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[20] *Communications Daily*, April 11, 1996.

[21] *Communications Daily*, April 11, 1996.